

REMARKS

Claims 1-25 are pending. Claims 1, 5-10, 12, 14-16, 18, and 19 have been amended and new claims 21-25 have been added to provide an additional measure of protection for the invention.

Reconsideration of the application is requested for the following reasons.

In the Office Action, claims 1-4, 12, and 13 were rejected under 35 USC § 102(b) for being anticipated by the Matsumoto patent. This rejection is traversed for the following reasons.

Claim 1 recites “applying a rising pulse to a scan electrode during a set-up interval of an initialization period, wherein the rising pulse changes to a second voltage after the rising pulse has changed to a first voltage, wherein the second voltage is higher than the first voltage” and “applying a falling pulse to a scan electrode during a set-down interval of the initialization period, wherein the falling pulse changes to a fourth voltage after the falling pulse has changed to a third voltage, wherein the third voltage is higher than the fourth voltage.”

The Matsumoto patent does not disclose these features. As shown in Figure 5, each display cell of the Matsumoto panel includes row (Y) and row (X) electrodes. However, unlike claim 1, the Matsumoto driving circuit does not apply a rising pulse to any of the row electrodes during a set-up interval of an initialization period, where the rising pulse changes to a second voltage after the rising pulse has changed to a first voltage and where the second voltage is higher than the first voltage. Rather, as shown in Figure 5, the row electrodes receiving either a constant ground value (0 V) or a

rectangular pulse of a constant magnitude during the reset period of subfield A.

The Matsumoto driving circuit also fails to apply a falling pulse to any of its row electrodes during a set-down interval of the initialization period, where the falling pulse changes to a fourth voltage after the falling pulse has changed to a third voltage and where the third voltage is higher than the fourth voltage.

Because the Matsumoto patent does not disclose all the features of claim 1, it is respectfully submitted that the Matsumoto patent does not anticipate this claim or any of its dependent claims.

Claim 12 recites features similar to the first two applying steps added by amendment to claim 1. Accordingly, it is submitted that claim 12 and its dependent claims are also allowable over Matsumoto.

Claims 5-11 and 14-20 were rejected under 35 USC § 103(a) based on an Matsumoto-APA combination. This rejection is traversed for the following reasons.

Claim 5 recites that “the sustain electrode is electrically floated during the first time interval that is a portion of said set-up interval.” These features are not taught or suggested by the cited combination.

Matsumoto discloses applying a priming pulse (Pp) during the reset period of a first sub-field (A) and an erasing pulse (Ep) during the reset period of a second sub-field (B). The priming and erasing pulses both correspond to fixed voltage values and therefore are not floating as required by claim 5. Moreover, erasing pulse Ep is applied solely for the purpose of erasing wall charge during the reset period. (See column 13, lines 7-12). It is therefore clear that Ep is applied during a period of time which claim 5

defines as a set-down interval. E_p is not applied in a “set-up interval” as recited and defined in claim 5.

Regarding APA, Figure 3 shows applying a ground voltage to all of the sub-fields in a frame and Figure 5 shows that the sustain electrodes in all the sub-fields of a frame are allowed to float. APA, however, does not teach or suggest electrically floating the sustain electrode during the first time interval that is a portion of said set-up interval as recited in claim 5. Based on these differences, it is therefore respectfully that claim 5 is allowable over a Matsumoto-APA combination.

Claim 7 recites that “the sustain electrode is electrically floated during a shorter time than said first time interval in the set-up interval.” As discussed above, these features are not taught or suggested by Matsumoto and APA, whether taken alone or in combination.

Claim 8 recites that “a time interval when the sustain electrode is floated is set to be shorter as it goes into the last sub-field of said frame.” These features are not taught or suggested by Matsumoto and APA, whether taken alone or in combination.

Claim 9 recites that “a voltage rising at a first slope is applied to the sustain electrode during said first time interval.” These features are not taught or suggested by Matsumoto and APA, whether taken alone or in combination.

Claim 10 recites that “a voltage rising at a lower slope than said first slope is applied to the sustain electrode during said first time interval.” These features are not taught or suggested by Matsumoto and APA, whether taken alone or in combination.

Claim 11 recite that “said voltage applied to the sustain electrode is set to have a lower slope as it goes into the last sub-field of said frame.” These features are not taught or suggested by Matsumoto and APA, whether taken alone or in combination.

Claims 14-20 are patentably distinguishable for similar reasons.

New claims 21-25 have been added to the application.

Claim 21 recites that “the first waveform is applied to allow the one or more sustain electrodes to electrically float during a first time interval that is a portion of said set-up interval and wherein the second waveform is different from the first waveform and is applied during a second time interval that is a portion of said set-up interval.” (Emphasis added). These features are not taught or suggested by the Matsumoto patent.

As previously discussed, Matsumoto applies a priming pulse (Pp) during the reset period of a first sub-field (A) and an erasing pulse (Ep) during the reset period of a second sub-field (B). The priming and erasing pulses both correspond to fixed voltage values and therefore are not floating as required by claim 21. Moreover, erasing pulse Ep is applied solely for the purpose of erasing wall charge during the reset period. (See column 13, lines 7-12). It is therefore clear that Ep is applied during a period of time which claim 21 defines as a set-down interval. Ep is not applied in a “set-up interval” as recited and defined in claim 21.

Because Matsumoto does not disclose all the features of claim 21, it is respectfully submitted that Matsumoto does not anticipate this claim or any of its dependent claims.

Regarding APA, Figure 3 shows applying a ground voltage to all of the sub-fields in a frame and Figure 5 shows that the sustain electrodes in all the sub-fields of a frame are allowed to float. APA does not teach or suggest applying a first waveform to a portion of a set-up interval of an initial sub-field and applying a second waveform different from the first waveform during the set-up interval for all or fewer than all of the remaining sub-fields in a frame as recited in claim 21.

Applicants further submit that any reliance on APA to reject amended claim 21 based on a Matusumoto-APA combination would be based purely on a hindsight reconstruction of references. Also, such a combination would fall short of forming the method of claim 21.

Specifically, Matsumoto discloses applying different pulses (Pp and Ep) to the sub-fields in a frame. As explained above, the second pulse is applied to erase wall charge during a reset period and therefore is applied during a set-down interval. Thus, Matsumoto teaches applying a first waveform (Pp) during a set-up interval of an initial sub-field and applying a different waveform (Ep) during a set-down interval in a subsequent subfield. Further, APA shows applying the same waveforms for all sub-fields of a frame.

At best, a Matsumoto-APA combination would therefore form a method which applies different waveform during set-up and set-down intervals of the sub-fields in a frame. Such a combination, however, would not apply different waveforms during the set-up intervals of initial and subsequent sub-fields of a frame, where the waveform applied to the set-up interval of the initial sub-field allows one or more sustain electrodes

to float and where the waveform applied during all or fewer than all remaining sub-fields is different from the first waveform.

Thus, even if Matsumoto and APA were combined, that combination would still fail to form the method of claim 21. For at least these reasons, Applicants respectfully submit that claim 21 and its dependent claims are allowable over Matsumoto, either taken alone or in combination.

Claim 22 recites that “the second waveform supplies the one or more sustain electrodes with a ground voltage during the set-up interval of all or fewer than all of the remaining sub-fields.” These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claim 23 recites that “the second waveform allows the one or more sustain electrodes to be electrically floated during a shorter time than the one or more sustain electrodes that are allowed to be electrically floated when the first waveform is applied during said first time interval in the set-up interval of the initial sub-field.” These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claim 24 recites that “the first waveform allows the one or more sustain electrodes to have a voltage rising at a first slope during said first time interval in the set-up interval of the initial sub-field.” These features are not taught or suggested by the cited references, whether taken alone or in combination.

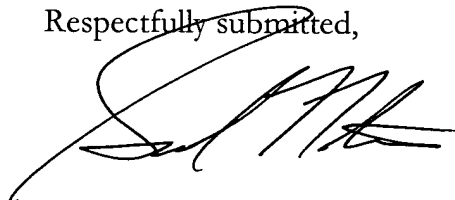
Claim 25 recites that “the second waveform allows the one or more sustain electrodes to have a voltage rising at a second slope different than said first slope during

said first time interval in the set-up interval of all or fewer than all of the remaining sub-fields." These features are not taught or suggested by the cited references, whether taken alone or in combination.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and timely allowance of the application are respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,



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